Online ISSN: 2581-3935
Print ISSN: 2589-7837

International Journal of Medical Science and Diagnosis Research (IJMSDR)

Available Online at www.ijmsdr.com

Volume 2, Issue 4; July-August: 2018; Page No. 43-45

ROLE OF MDCT IN CHARACTERIZATION OF RETROPERITONEAL MASS LESIONS

Dr. Anil Kumar Verma[1], Dr. Chaturbhuj Prasad Swarnkar[2], Dr.G.L.Meena[3]

[1] Resident Doctor, [2] Professor, [3] Senior Professor &Head

[1,2] Department Of Radiodiagnosis, SMS Medical College, Jaipur

[3] Department Of Radiodiagnosis, S.P. Medical College, Bikaner

ABSTRACT:

Background- The great majority of retroperitoneal masses are found incidentally as a result of the use of computed tomography (CT), ultrasonography, and MRI . Therefore, the proper characterization of the masses is essential so that appropriate management is instituted .

Method- This prospective study was conducted in 35 patients during the period of one year and patients fulfilling inclusion and exclusion criteria was included in the study and was include data collection, data organization, presentation, data analysis and data interpretation.

Result- Their mean±SD age was 32.33±18.60 years.15 patients were male and 15 patients were female. 13.33% of tumor was wilms tumor.

Conclusion- Characteristic imaging findings, such as the composition and relationship to adjacent structures, may be combined with clinical information and assisted by diagnostic scheme to help narrow the differential diagnosis.

Keywords- imaging,CT scan,Tumor.

INTRODUCTION:

The great majority of retroperitoneal masses are found incidentally as a result of the use of computed tomography (CT), ultrasonography, and MRI. Therefore, the proper characterization of the masses is essential so that appropriate management is instituted. With modern CT imaging equipment, the diagnosis of most retroperitoneal masses is usually straightforward and accurate[1,2].

The evaluation usually can be accomplished if a high-quality examination is performed, if the clinical history of the patient is kept in mind, and the condition that mimics a retroperitoneal neoplasm is considered and excluded. Multidetector (also known as multislice, multichannel, or multisection) computed tomography (MDCT) is the most recent advancement in CT technology. It uses a multiple-row detector array instead of the single-row detector array used in helical CT. These new CT scanners allow 2–25 times faster scan times compared with helical CT scanner with the same or better image quality [3,4]. These faster scan times result in decreased breath-hold times with reduced motion artifact and better diagnostic image. Increased volume coverage is combined with thinner slice thickness to obtain better quality volume data sets for workstation analysis, either in two dimensional axial, multiplanar reformatting or three-dimensional imaging. The main advantages of MDCT are faster scanning times, increased volume coverage, and improved spatial and temporal resolution. Moreover, using MDCT allows imaging to be obtained from the same acquisition data set. MDCT allows images

Corresponding author: Dr. Chaturbhuj Prasad Swarnkar

to be obtained in multiple phases of renal parenchymal enhancement and excretion in the collecting system after administration of a single bolus of intravenous contrast material. Therefore, detection and characterization of small retroperitoneal masses display the arterial and venous supply of the retroperitoneal structures similar to conventional angiography, and demonstration of the abnormalities using different three dimensional display techniques are possible with MDCT [4].

Material and Methods

Study design-This prospective study was performed aiming to determine the role of CT in the differential diagnosis of retroperitoneal masses.

Study population-The study was performed at National Cancer Institute (NCI) and approved by its ethical committee, and informed consent was given by all patients.

Inclusion criteria-Patients with primary retroperitoneal lesion were included.

Exclusion criteria-

Presence of lesions not located at the retroperitoneal region.

Unstable general condition.

Results

A total of 30 patients presented with abdominal or pelvic swelling (detected by means of clinical examination or by previous imaging study suspected to be of retroperitoneal origin).

Their mean±SD age was 32.33±18.60 years.

15 patients were male and 15 patients were female.

Table 1: Type of tumors

Pathology of tumor	No. of patients	Percentage
Renal wilms tumor	4	13.33
Fibrosarcoma	2	6.67
Lymphoma	3	10.0
Liposarcoma	2	6.67
Renal angiolipoma	2	6.67
Myofibroblastic tumor	1	3.33
Neuroblastoma	3	10.0
Neurofibroma	2	6.67
Adrenal adenoma	2	6.67
Primary germ cell tumor	2	6.67
Renal hyphernephroma	1	3.33
Teratoma	2	6.67
Sarcoma	2	6.67
Pancreatic head carcinoma	1	3.33

13.33% of tumor was wilms tumor.

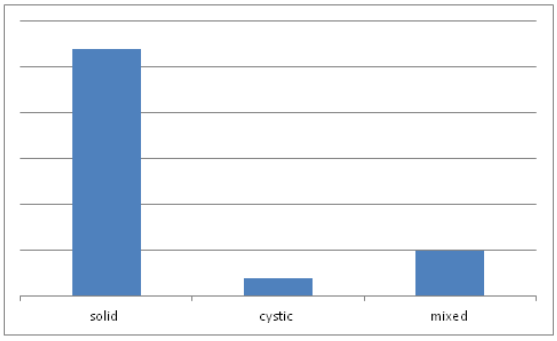

Figure 1: Consistency of the computed tomography-examined lesions.

© 2018 IJMSDR. All Rights Reserved.

Discussion

The diagnostic study, analysis, and characterization of retroperitoneal masses and their behavior are one of the key elements for elaborating a surgical or therapeutic strategy, determining the prognosis, and for the follow-up of treatment efficacy in patients with benign or malignant disease. At present, CT is the most reliable, effective, and efficient instrument in this context, offering sensitivity and specificity values in excess of 87%, with a diagnostic reliability of over 90% in application to retroperitoneal masses of a cystic or complex nature, with nonspecific or specific inflammatory characteristics, or of a primary or secondary neoplastic nature [5]. MDCT is widely used for the evaluation of retroperitoneal tumors. As thin-slice images afforded by MDCT make it possible to detect smaller lesions than previously, MDCT is useful for the detection and diagnosis of small lesions. Furthermore, high-resolution multiplanar reformatted images reconstructed with the thin-slice MDCT images are helpful for evaluating perinephric spaces, as well as the tumor thrombus of retroperitoneal neoplasm. Therefore, MDCT is expected to provide accurate preoperative staging of retroperitoneal cancer. Maximum intensity projection and volume-rendering images have been used to provide the urologist with a road map for surgery. MDCT has the potential to replace traditional imaging techniques in the evaluation of pathologic processes involving the inferior vena cava. The ability to acquire near-isotropic data allows high-quality reconstructions in the sagittal and coronal planes and thus overcomes one of the major limitations of CT in evaluating the inferior vena cava[6].

Conclusion

Characteristic imaging findings, such as the composition and relationship to adjacent structures, may be combined with clinical information and assisted by diagnostic scheme to help narrow the differential diagnosis.

References

1. Thornton FJ, Kandiah SS, Monkhouse WS. Helical CT evaluation of the perirenal space and its boundaries: a cadaveric study. Radiology 2001; 218:659–663.
2. Gore RM, Balfe DM, Aizenstein RI, Silverman PM. The great escape: interfascial decompression planes of the retroperitoneum. Am J Roentgenol 2000; 175:363–370.
3. Nishino M, Hayakawa K, Minami M, Yamamoto A, Ueda H, Takasu K. Primary retroperitoneal neoplasms: CT and MR imaging findings with anatomic and pathologic diagnostic clues. Radiographics 2003; 23:45–57.
4. Rha SE, Byun JY, Jung SE, Chun HJ, Lee HG, Lee JM. Neurogenic tumors in the abdomen: tumor types and imaging characteristics. Radiographics 2003; 23:29–43.
5. Neville A, Herts BR. CT characteristics of primary retroperitoneal neoplasms. Crit Rev Comput Tomogr 2004; 45:247–270.
6. Grainger RG, Allison DJ, Adam A, Dixon AK. Diagnostic radiology. 4th ed. London: Churchill Livingstone; 2001.

© 2018 IJMSDR. All Rights Reserved.